IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Confirmation No.: 1358
Aliaksandr A. ANTANOUSKI	Art Unit: 2884
Appl. No.: 10/544,279	Examiner: TANINGCO, MARCUS H.
Filed: August 3, 2005	Atty. Docket: 2447.0060000
For: **SYSTEM AND DEVICE FOR OBJECT DETECTION AND IDENTIFICATION USING GAMMA, X-RAY AND/OR NEUTRON RADIATION**	

Declaration of Victor Kulik under 37 C.F.R. § 1.132

Commissioner for Patents
Washington, D.C. 20231

Sir:

The undersigned, Victor V. Kulik, declares and states that,

1. I consider myself an expert in the field of radiation detectors, such as those that are the subject of the present application and of the x-ray systems described in Chan, U.S. Patent Publication No. 2003/0085163.

2. I have a Ph.D. in Physics, with a particular emphasis on x-ray crystallography and electron microscopy. I have several years of experience in the industry, including work on radiation detection systems, such as those that are described and claimed in the present application. My curriculum vitae is attached to this Declaration.

3. I have reviewed the present application, the Office Action, the claims of the present application and the referenced used to reject these claims, i.e., Chan. I respectfully disagree with the reasoning in the Office Action, for a number of reasons.

4. First, the pending claims 10 and 18 recite detection of gamma, x-ray and neutron radiation. The Office Action refers to Chan as disclosed in this aspect. Respectfully, this is incorrect. Chan describes a baggage x-ray system. Such systems are commonly seen at airports, or other similar fixed checkpoints. However, such systems do not detect neutron radiation.

5. Chan does not mention detection of neutron radiation anywhere in his description. In any event, detection of neutron radiation is not a feature of such x-ray baggage scanners. Therefore, I respectfully disagree with the Office Action regarding this aspect of the rejection.

6. Additionally, claims 10 and 18 are directed to detecting radiation from an object – in other words, the object that is being examined is itself the source of the radiation. This is fundamentally different from what is disclosed in Chan. X-ray baggage scanners such as those shown in Chan, do not detect radiation from an object. Such x-ray scanners have their own x-ray source, and an x-ray detector. The object that is being looked for, such as weapons, narcotics, and so on, does not normally itself emit radiation (not gamma radiation, not neutron radiation, not x-ray radiation). This is the reason why such x-ray scanners are designed to detect their own radiation, and generate an image on the screen that corresponds to the contents of the baggage. However, as noted earlier, this is fundamentally different from detecting radiation from the object itself. I therefore respectfully disagree with the Office Action for this additional reason.

7. Furthermore, independent claims 10 and 18 recite providing a detection signal. Chan does not provide a detection signal based on radiation emitted by the object – Chan provides an image of the baggage on the screen. To one of ordinary skill in the art, this is a well understood, and fundamental difference. I therefore respectfully disagree with the Office Action for this additional reason.

8. Furthermore, claims 10 and 18 recite detection of radiation spectrum from the object that is being examined. The system described in Chan is incapable of doing so. All the system in Chan does, as noted earlier, is provide an image of the x-rayed baggage.

9. On the other hand, the spectrum that is detected by the systems recited in claims 10 and 18 makes it possible to differentiate between various radioactive isotopes, and look for specific radioactive materials, such as uranium, plutonium, strontium and so on. One of ordinary skill in the art would clearly understand that it is impossible to use the system in Chan to perform this task – Chan is simply unsuitable for this. I therefore respectfully disagree with the Office Action for this additional reason.

10. The Office Action rejected claim 12, which his specifically directed to a mobile system, such as a system that includes a smartphone or a laptop computer, for performing many of the processing and display functions. The Office Action argues that such a system is obvious in view of Chan. I respectfully disagree. Claim 12 recites a "mobile device." Chan is clearly directed to a stationary system. As discussed earlier, such stationary systems are commonly seen in airports and inside some buildings. One of ordinary skill in the art would not regard these systems as mobile – they are typically bulky, and in any event, even a brief inspection of the figures in Chan demonstrates that mobility or portability is not a feature of the system in Chan. I therefore respectfully disagree with the Office Action's reasoning regarding claim 12.

11. Claim 17 is rejected as being obvious over Chan. I respectfully disagree with the Office Action's conclusion of obviousness. Claim 17 is directed to a combination that includes a global positioning system unit. Chan has no need whatsoever for a GPS unit.

12. First of all, since the system in Chan is stationary, its location is always known. In virtually all circumstances, its location is the same exact location where the unit was earlier. Second, even if the unit in Chan is moved, this is often a laborious procedure, the device is not plugged in during movement, and knowing the instantaneous position of the device is irrelevant.

13. Further still, both the location from which Chan is moved and the location to which Chan is moved are known in advance and inclusion of a GPS unit in Chan simply makes no sense.

14. Further still, such baggage scanning systems are virtually always located inside buildings, where the GPS signal is often blocked by the building structure. Therefore, one of ordinary skill in the art would not consider it obvious to add a GPS unit to Chan, since frequently such an addition would be useless. I therefore respectfully disagree with the Office Action's reasoning regarding claim 17 based on this additional ground as well.

15. As the person signing below, I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issue thereupon.

October 4, 2007
Date

Victor Kulik

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Education

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Ph.D. in Physics (X-ray crystallography and electron microscopy)

Dissertation in English: *Structure of bovine liver catalase solved from electron diffraction data of multilayered crystals*

Diploma with Honors

Belarus State University Minsk, Belarus

Department of Business and Information Technology 09/1997 - 07/1998

Diplom in Economics

Belarus State University Minsk, Belarus

Department of Physics 09/1993 - 06/1998

Diplom in Biophysics

Thesis: *Formation of Active Photosystem I in Etiolated Barley Leaves without Light.*

Awards Max-Planck-Society Ph.D. fellowship providing full financial support for the PhD Program (2000-2004)

Job Experience

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Scientist **08/2004 – 06/2005**

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Major responsibilities:

Writing databases on physics and biophysics for a semantic analyser